

DRAFT

Programmatic Environmental Assessment

for
Fisheries Research Conducted and Funded by the
Northwest Fisheries Science Center

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Appendix D

Protected Species Handling Procedures

for
NWFSC Fisheries Research Vessels



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1. Marine Mammal Handling Guidelines and Data Collection

The following describes handling procedures for incidentally caught marine mammals including data collection on captured animals. Specific data collection requirements may vary somewhat by survey, but have been developed to be responsive to all relevant permits and legislation (e.g., Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA), and Magnuson-Stevens Act (MSA)). Animals that are captured may be alive, seriously injured or dead. A priority is to return a marine mammal that is still alive to the water as soon as possible. Of paramount importance is the safety of the scientists and crew. Any actions taken to record data, collect samples, etc., on captured marine mammals should all be performed only after an evaluation of the risks involved to personal safety. Unacceptable human risk is not authorized in assisting marine mammals (e.g., observers are prohibited from entering the water to aid a marine mammal). A marine mammal may come aboard looking dead when it is in fact in shock and can suddenly wake up. This presents a serious safety risk to any science or vessel crew. Marine mammals can also carry microbes creating the risk of potential disease transmission and care should be taken if handling a marine mammal.

No collection of tissue samples or carcasses will be conducted unless authorized under the MMPA.

Marine Mammal Sampling Protocol for Incidental Takes during NWFSC Research Cruises

Marine Mammals that Are Living When Brought Aboard. If a marine mammal is brought aboard that is alive (even if injured), the goal should be to return the animals to the water as rapidly as possible. Once the risks and safety issues have been properly assessed and managed, identify the animal to species if possible, assess the condition (noting any injuries), take pictures from different angles, and then release the animal (see data sheet).

Marine Mammals that are Dead When Brought Aboard. If a marine mammal is brought aboard that is dead, the following is recommended for data collection on the animal. If possible, the easiest way to obtain detailed information on incidentally killed marine mammals is to simply put the carcass in a freezer and allow NWFSC marine mammal staff to process the animal after arrival of the ship into port. This is preferable to being worked up while at sea because:

1. Information/samples collected from untrained individuals makes the data highly suspect.
2. Collection of information/samples is time consuming. Necropsy of a marine mammal can be a messy/bloody procedure, potentially exposing untrained individuals to zoonotic pathogens.
3. Necropsy of a marine mammal requires sharp knives to be used on a moving platform, which can be a safety issue.
4. The most information can be gained through a full necropsy by a trained marine mammal biologist on land.

For retained carcasses, **assign a field id**, i.e. BMS20110731.01 (ship, date, carcass number for that day). In this example the specimen was collected aboard the Bell M Shimada on July 31, 2011 and is the first animal collected on that day. Attach a tag with a zip tie around the flukes or flipper (on pinnipeds).

However, if there is absolutely no space in the freezer to place the animal (or no freezer available), the following minimum information should be collected (cetaceans, #1-8, for pinnipeds, #1-6) and recorded on the accompanying data sheet:

1. **Assign a field id** as described above and label all samples with this id.
2. **Photos.** (lateral body, head, genital region)

3. **Species ID.**

4. **Total Standard Length** from tip of upper jaw to fluke notch (cetaceans) or tip of nose to tip of tail (pinnipeds), see diagram on following page. Straight length is preferable to curvilinear. It is assumed length is straight. Please note if it is curvilinear.
5. **Girth.** Maximum girth is collected for cetaceans and axillary girth is collected for pinnipeds. See diagrams on the following pages. If there is no dorsal fin on a cetacean (e.g. northern right whale dolphins) take axillary girth.
6. **Sex.** Take photos of genital region. (In cetaceans, anus and genital slit are almost continuous in females, but are clearly separate in males. In pinnipeds, two openings in between the rear flippers indicates female, one in between rear flippers and one on belly indicates male. See photos on following page).
7. **Skin Sample.** (3 x 0.5 cm is sufficient), frozen in whirlpack or vial. In pinnipeds, skin (not fur) is available at the end of the flippers.
8. **Blubber Sample.** With thin layer of muscle attached, 4 x 4 in, wrapped in foil, frozen. For cetaceans, this is collected from left lateral side just anterior of dorsal fin (where max. girth is taken).
9. **Head Sample.** The head should simply disarticulate once you cut through the blubber, muscle and esophagus. Start cutting one fist length posterior to the blowhole. You do not need to cut through any bone to get the head off.

Measuring standard total length = tip of upper jaw to fluke notch

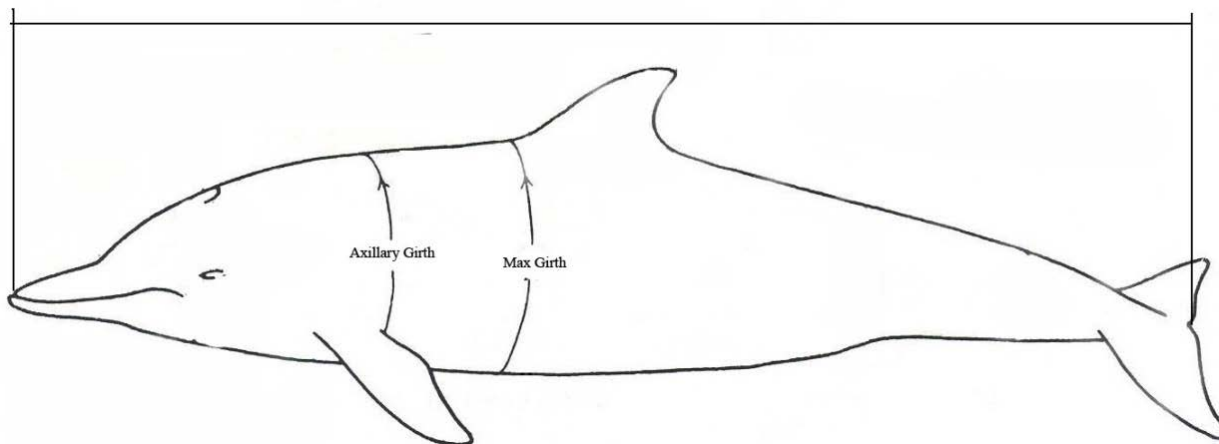


Figure 4-7. Female delphinid

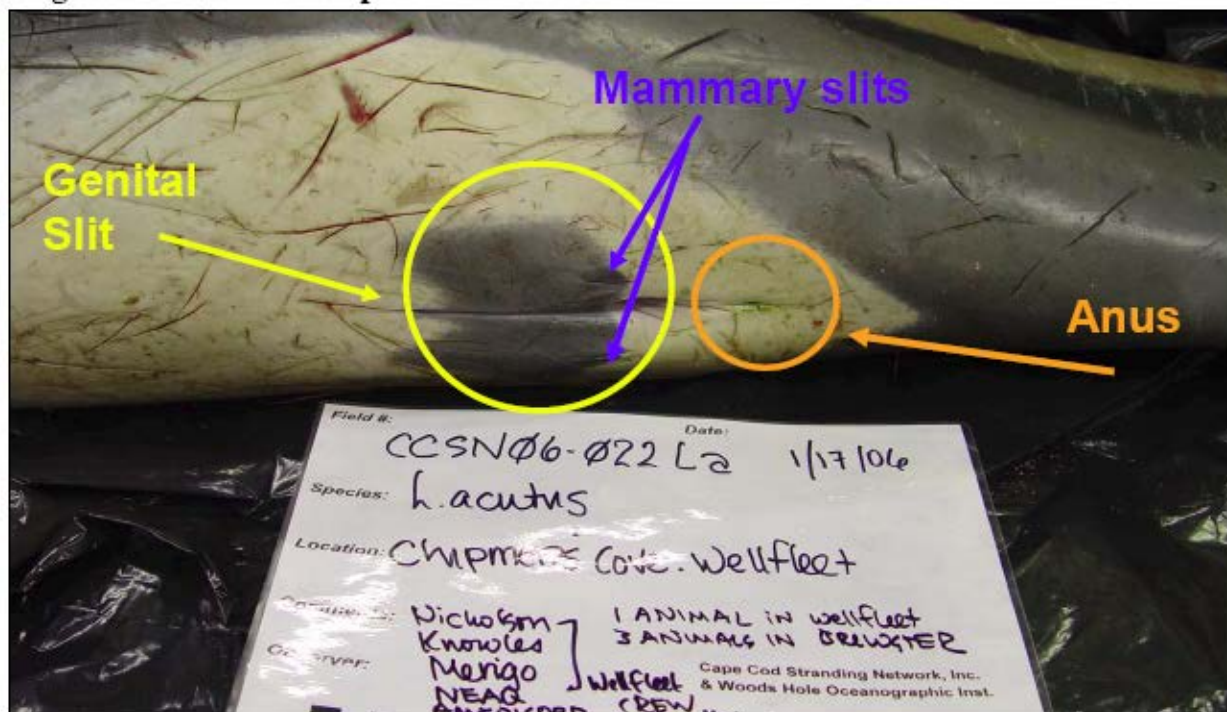
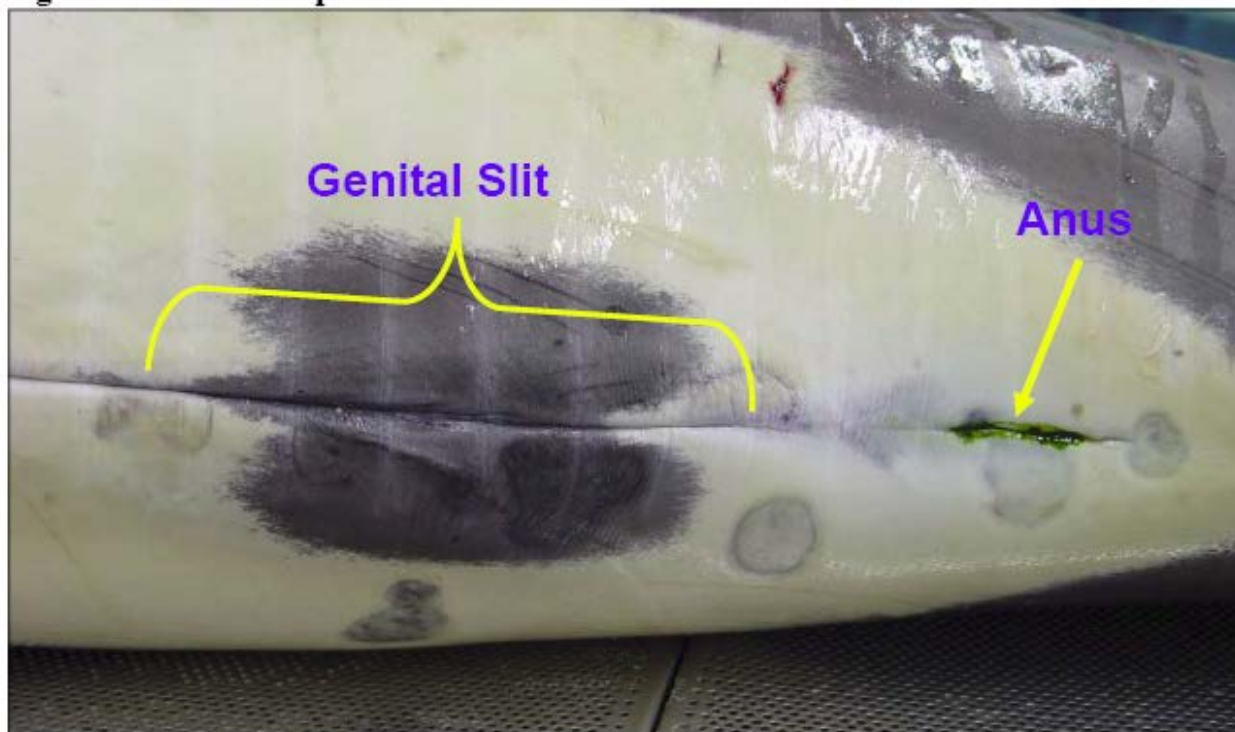


Figure 4-8. Male delphinid





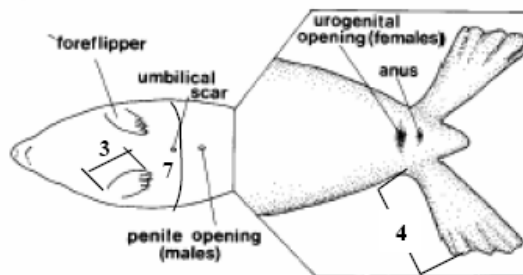
Standard straight length: tip of nose to tip of tail



Curvilinear length: tip of nose to tip of tail (only use if straight length not possible)



Girth measurement



Strandings and Disentanglement

The National Marine Mammal Health and Stranding Response Program (MMHSRP) has developed protocols and guidance on responding to marine mammals that are stranded or in distress (including entangled animals), release protocols, and requirements for training. If an entangled animal is encountered, the appropriate NMFS Regional Marine Mammal Stranding Coordinator should be contacted as soon as possible. The list of Regional Stranding Coordinators is provided in Appendix 1. In some cases, vessel captains may be required by law to attempt disentanglement; it is the responsibility of a vessel captain to understand and carry out any legal requirements. If disentanglement is attempted, standard procedures on mitigating the risks to the animal and persons aboard the vessel should be followed. Such protocols are outside the scope of this document, but further information and copies of related materials can be obtained from:

Marine Mammal Health and Stranding Response Program
National Marine Fisheries Service Office of Protected Resources
Marine Mammal and Sea Turtle Conservation Division, F/PR21315 East-West Highway
Silver Spring, MD 20910
<http://www.nmfs.noaa.gov/pr/health/>
Phone: (301) 713-2322
Fax: (301) 427-2522

Stranding response resources and publications can be obtained from:

<http://www.nmfs.noaa.gov/pr/health/publications.htm>

NMFS Regional Strandings Coordinators

Northwest (WA, OR)

Brent Norberg, Stranding Coordinator
National Marine Fisheries Service
7600 Sand Point Way NE
Seattle, WA 98115
Phone: (206) 526-6550; Fax: (206) 526-6736

Lynne Barre, Assistant Stranding Coordinator
7600 Sand Point Way NE
Seattle, WA 98115
Phone: (206) 526-4745; Fax: (206) 526-6736

Southwest (CA)

Joseph Cordaro, Stranding Coordinator
Sarah Wilkin, Stranding Coordinator
National Marine Fisheries Service
501 West Ocean Boulevard, Suite 4200
Long Beach, CA 90802-4213
Phone: (562) 980-4017; Fax: (562) 980-4027
Large Whale Entanglement Hotline: 1-877-SOS-WHALE (1-877-767-9425)

Figure 1. Data sheet for recording information about a marine mammal take (one sheet per animal).

MARINE MAMMAL SPECIMEN DATA
INCIDENTAL RESEARCH TAKES ONLY

Collection Date:

Collector:

Vessel and Survey Name:

Net Type:

Field ID (ship initials-yymmdd.xx where xx is specimen number):

Species:

Locality:

Lat/Long of Capture:

Site Description (e.g., Station Name)

Sex☉ Male/Female/Unknown)

Length (cm) (see pictures above appropriate length measurements):

Girth (cm):

Brief History of Take:

 Date of Death:

 Time of Death:

 Location of Take:

ADDITIONAL DATA COLLECTED: Yes No

Photographs:

Carcass:

Head:

Skin:

Blubber:

EXTERNAL EXAMINATION: Provide as much detail as possible

General condition (lesions, deformities, appearance, color):

Parasites:

Mouth / Teeth:

Eyes:

Blowhole / Nostrils:

Anus and Urogenital openings:

Mammary slits / glands:

Fins / Flukes / Flippers:

2. Seabird Handling Procedures and Data Collection

Seabirds may be incidentally caught in most gears. While it is highly likely birds will be dead in nets, especially those that are towed, it is possible that living birds may be caught in a net as well as in some other gear types, especially hook and line gears. Again, as with marine mammals, there may be safety issues processing a captured seabird. This includes bites and scratches from a live bird and potential diseases on both living and dead birds.

The NWFSC has a salvage permit from the U.S. Fish and Wildlife Service for birds incidentally caught during NWFSC fisheries research activities (Number MB40092B-0).

Seabird that is Brought Aboard Alive (processing should consider safety issues). If a live bird is captured by any research gear, then first disentangle or unhook the bird if hook and line. If the bird is not listed under the Endangered Species Act, then use the following procedure:

1. Identify the bird if possible to species and sex.
2. Photograph the bird. If possible take the following pictures- overall dorsal, overall ventral, close up of head/beak, bands or tags, and any wounds, marks, damage.
3. Describe condition of bird including any damage (wounds, scars).
4. Check for presence of bands or tags and note number and location of any.
5. Comment on response of bird after release (did it fly immediately, for example).

Seabird that is Brought Aboard Dead.

1. Identify the bird if possible to species and sex.
2. Photograph the bird. If possible take the following pictures- overall dorsal, overall ventral, close up of head/beak, bands or tags, and any wounds, marks, damage.
3. Describe condition of bird including any damage (wounds, scars).
4. Check for presence of bands or tags and note number and location of any.
5. Retain bird, assuming it is fresh- (i.e. caught by the survey and not dead for other reasons). Prepare a label with bird species, vessel name, and id number (date followed by ship initials- yymmdd.xx) and place bird and label in large bag.

If a live bird is brought aboard that is federally protected under ESA (e.g., short -tailed albatross or marbled murrelet), then use the following protocol.

Immediately try to contact National Marine Fisheries Service, U.S. Coast Guard, or U.S. Fish and Wildlife Service. They will contact an expert to give you advice in the handling and release of the bird.

National Marine Fisheries Service (NMFS)
(808) 944-2200

U.S. Coast Guard (USCG)
08240.0 KHz (Daytime ITU Channel 816)
12242.0 KHz (Daytime ITU Channel 1205)
04134.0 KHz (Nighttime ITU Channel 424)
06200.0 KHz (Nighttime ITU Channel 601)

1. If caught in hook and line, stop vessel to reduce tension on the line and bring bird aboard using a dip net.

2. Wrap the bird's wings and feet with a clean towel to protect its feathers from oils or damage.
3. Remove any entangled lines from the bird and determine if the bird is dead or alive. If dead, follow procedure for processing dead birds. If alive, place bird in a safe, enclosed place and immediately contact NMFS, USCG or USFWS. If unable to make contact for 24-48 hours, determine if the bird is lightly, moderately, or deeply hooked (see description below).
4. If bird is deeply hooked, keep bird in a safe, enclosed place until further instructed. Do NOT release the bird.
5. If bird is lightly or moderately hooked, remove hook by cutting the barb and backing hook out.
6. Allow bird to dry for 1/2 hour to 4 hours in a safe, enclosed place. Refer to Release Guidelines.
7. Record information in the short-tailed albatross recovery data form.

Bird Condition:

Lightly Hooked: Hook is clearly visible on bill, leg or wing.

Moderately Hooked: Hooked in the mouth or throat with hook visible.

Deeply Hooked: Hook has been swallowed and is located inside the bird's body below the neck.

The bird is ready for release if it meets ALL of the following criteria:

- Stands on both feet with toes pointed forward
- Holds its head erect and responds to sound and motion
- Breathes without making noise
- Flaps and retracts wings to normal folding position
- Feathers are dry

If any of these conditions are not met, the bird cannot be released.

Figure 2. Data sheet for recording information about a seabird take (one sheet per animal).

SEABIRD SPECIMEN DATA
INCIDENTAL RESEARCH TAKES ONLY

Collection Date:
Collector:
Vessel and Survey Name:
Net Type:
Field ID (bag label) (ship initials-yymmdd.xx):
Species:
Locality:
Lat/Long of Capture:
Site Description (e.g., Station Name):
Sex ♂ Male/Female/Unknown)
Length (cm) (longest length, bill to feet)

Brief History of Take:

Date of Take
Time of Take:
Location of Take:
Comments

ADDITIONAL DATA COLLECTED:

Photographs:
Carcass Obtained:
Head:
Skin:

EXTERNAL EXAMINATION: Provide as much detail as possible

General condition (lesions, deformities, appearance, color):

Tags/Bands/Marks:

Parasites:

External Marks:

3. ESA-listed Fish Handling Guidelines and Data Collection

Handling procedures for fish will only focus on incidental take of ESA-listed species. Protocols should be in place to process and handle directed take of listed species as part of Section 10 permits. There are a number of listed species that could be caught by NWFSC gears. Some of these can be challenging to differentiate, even for experts.

Sturgeon

Green sturgeon are listed under the ESA while white sturgeon are not. If a green sturgeon is brought aboard as an incidental take, first identify the fish to species if possible and determine if is alive or dead. If dead, record data using the data sheet in Figure 3 such as capture date and time, survey, vessel and so on. Take photographs of the specimen from several angles. Freeze the entire specimen if possible. If the specimen cannot be frozen, take a fin clip off the dorsal fin or tail (size of a dime) and preserve in alcohol. If the specimen is alive, record fork length, take photographs, and release the fish as quickly as possible.

Salmonids

Incidentally caught salmon can range in size from several inches to over a meter and include six different species. Given that most incidental takes of salmonids will be with gear that are not effective for catching salmon, numbers should be low. In general, juvenile and subadults will be dead or severely injured after being caught in a trawl. Conversely, most salmonids caught on hook and line should be alive. Fish identification sheets will be provided all surveys along with a measuring board and vials for fin clips. Some populations of Chinook, Coho, sockeye and steelhead are listed under ESA. We assume that incidental take of salmonids will be low (< 5 per haul) and thus the following guidelines are appropriate. The following are handling and data recording procedures for salmonids:

1. Adults of any species (>450 mm tail fork length [FL]) – identify the specimen, measure fork length, record if adipose is missing, take a fin clip (dorsal or caudal) and put in labeled vial, and release as quickly as possible.
2. Juveniles and sub adults (<450 mm FL) – Assuming there is a freezer or some sort of cold storage available, identify the specimen, kill it humanely and put in individually labelled bag. If the specimen cannot be retained, identify the specimen, record capture information, measure fork length, take fin clip, and release.

Rockfish

In Puget Sound, several species of rockfish are listed under ESA: Boccaccio, yelloweye rockfish, and canary rockfish. Because these fish typically live at considerable depths, they are likely to be dead or seriously injured when brought onto the boat. Thus, we recommend that unless the fish is clearly alive, that the fish be killed and then frozen whole with a label (see Figure 3 for data to be recorded).

Smelt

The southern population segment of eulachon are listed under ESA as threatened. Therefore, any eulachon caught incidentally should be assumed to be listed. While small catches of eulachon are possible, it is also possible that a survey may catch 100's to 1000's in individual hauls. If logistically possible (e.g., there is freezer space), small catches of eulachon (<20) should be frozen whole in a labeled bag (see Figure 4). In the event of a large catch (>20) and freezing fish is possible, put 20 individual eulachon into a labeled bag and freeze. Either count and release the rest of the fish or estimate total numbers using some subsampling procedure and then release the fish. If preserving specimens is not possible, then count or estimate numbers in the haul, record fork length of up to 20 eulachon in a haul and release them.

Figure 3. Data sheet for incidental takes of sturgeon, salmonids, and rockfish.

Survey	Date	Time	Location	Fish ID	Length	Species	Clipped Yes/No	Disposition

Figure 4. Data sheet for eulachon (one for any haul with eulachon).

Collection Date	Collector	Vessel and Survey Name	Net Type	Field ID	Locality	Lat/Long of Capture	Site Description (e.g., Station Name)	Total Catch of Eulachon	Method used to Estimate Total Catch	Disposition of Fish (released, frozen):